REMARKS

Claims 1, 3-7, 9-14 and 16-21 are pending. Claims 1, 3-7, 9-14 and 16-21 stand rejected under 35 U.S.C. § 112, ¶ 1 as failing to comply with the written description requirement. Claims 1, 3-7, 9-14 and 16-21 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,523,026 to Gillis. Claims 2, 8, 15 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,523,026 to Gillis in view of U.S. Patent No. 5,799,276 to Komissarchik et al.

Reconsideration is requested. No new matter is added. The rejections are traversed. Claims 1, 3-7, 9-14 and 16-21 remain in the case for consideration.

INTERVIEW SUMMARY

On April 7, 2005, the undersigned spoke with Examiner Opsasnick regarding the Office Action. The undersigned pointed out that no new matter had been incorporated by reference into the application. On page 1, lines 25-27, this application incorporated by reference U.S. Patent Application Serial No. 09/615,726, which in turn (on page 3, line 29 through page 4, line 1) incorporated by reference U.S. Patent Application Serial No. 09/512,963. For the Examiner's reference, a copy of the pertinent pages from U.S. Patent Application Serial No. 09/615,726 is attached. A copy of the pertinent material from U.S. Patent Application Serial No. 09/512,963 was attached to the Response to the Office Action dated September 7, 2004. The Examiner agreed that the claims are fully supported by the specification, and that the rejection under 35 U.S.C. § 112, ¶ 1 should be withdrawn. As the claims are properly supported under 35 U.S.C. § 112, ¶ 1, the Examiner agreed that the rejections under 35 U.S.C. §§ 102(e) and 103(a) are also incorrect.

The Examiner and the undersigned discussed whether a claim of priority amounts to an incorporation by reference. The undersigned refers the Examiner to MPEP 201.06(c), which says that "A priority claim under 35 U.S.C. § 120 in a continuation or divisional application does not amount to an incorporation by reference of the application(s) to which priority is claimed." Therefore, a newly-made claim of priority, without an explicit incorporation by reference, does not incorporate additional subject matter into a patent application, even if made after the filing date of the patent application.
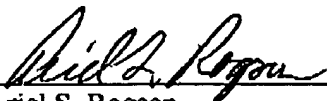
Given that the subject matter incorporated by reference from the '963 patent application is not explicitly disclosed in this patent application but is partly included in the claims, the undersigned offers to amend the specification of this patent application to include

explicitly the pertinent subject matter of the '963 patent application. The Examiner is requested to contact the undersigned if such amendment is desirable.

In view of the novelty and non-obviousness of the claims as previously presented, this case is allowable over the prior art of record. For the foregoing reasons, reconsideration and allowance of claims 1, 3-7, 9-14 and 16-21 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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                                                         Novell Ref. No. IDR-450
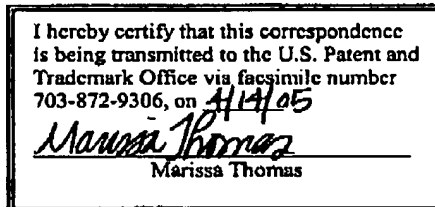
FIG. 3 shows a two-dimensional topological vector space in which the semantic abstracts for the documents of FIG. 2 are compared by measuring the angle and/or distance between centroid vectors for the semantic abstracts.

FIG. 4 shows a computer system on which the invention can operate to construct

5   semantic abstracts.

FIG. 5 shows a computer system on which the invention can operate to compare the semantic abstracts of two documents.

FIG. 6 shows a flowchart of a method to determine a semantic abstract for a document in the system of FIG. 4 by extracting the dominant phrases from the document.

10   FIG. 7 shows a flowchart of a method to determine a semantic abstract for a document in the system of FIG. 4 by determining the dominant context of the document.

FIG. 8 shows a dataflow diagram for the creation of a semantic abstract as described in FIG. 7.

FIG. 9 shows a flowchart showing detail of how the filtering step of FIG. 7 can be

15   performed.

FIG. 10 shows a flowchart of a method to compare two semantic abstracts in the system of FIG. 5.

FIG. 11 shows a flowchart of a method in the system of FIG. 4 to locate a document with content similar to a given document by comparing the semantic abstracts of the two

20   documents in a topological vector space.

FIG. 12 shows a saved semantic abstract for a document according to the preferred embodiment.

FIG. 13 shows a document search request according to the preferred embodiment.

25   **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Determining Semantic Abstracts

A semantic abstract representing the content of the document can be constructed as a set of vectors within the topological vector space. (The construction of state vectors in a topological vector space is described in U.S. Patent application Serial No. 09/512,963, titled

30   "CONSTRUCTION, MANIPULATION, AND COMPARISON OF A MULTI-DIMENSIONAL SEMANTIC SPACE," filed February 25, 2000, incorporated by reference

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herein and referred to as "the Construction application.") FIG. 1 shows a two-dimensional topological vector space in which state vectors are used to construct a semantic abstract for a document. (FIG. 1 and FIGs. 2 and 3 to follow, although accurate representations of a topological vector space, are greatly simplified for example purposes, since most topological

5   vector spaces will have significantly higher dimensions.) In FIG. 1, the "x" symbols locate the heads of state vectors for terms in the document. (For clarity, the line segments from the origin of the topological vector space to the heads of the state vectors are not shown in FIG. 1.) Semantic abstract 105 includes a set of vectors for the document. As can be seen, most of the state vectors for this document fall within a fairly narrow area of semantic abstract 105.

10   Only a few outliers fall outside the main part of semantic abstract 105.

Now that semantic abstracts have been defined, two questions remain: what words are selected to be mapped into state vectors in the semantic abstract, and how is distance measured between semantic abstracts. The first question will be put aside for the moment and returned to later.

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Revisiting Semantic Distance

Recall that in the Construction application it was shown that $\mathcal{H}(\mathbf{S})$ is the set of all compact (non-empty) subsets of a metrizable space $\mathbf{S}$. The Hausdorff distance h is defined as follows: Define the pseudo-distance $\xi(x, u)$ between the point $x \in \mathbf{S}$ and the set $u \in \mathcal{H}(\mathbf{S})$ as

20   $$\xi(x, u) = \min\{d(x, y) : y \in u\}.$$

Using ξ define another pseudo-distance $\lambda(u, v)$ from the set $u \in \mathcal{H}(\mathbf{S})$ to the set $v \in \mathcal{H}(\mathbf{S})$:

$$\lambda(u, v) = \max\{\xi(x, v) : x \in u\}.$$

Note that in general it is *not* true that $\lambda(u, v) = \lambda(v, u)$. Finally, define the distance

25   $h(u, v)$ between the two sets $u, v \in \mathcal{H}(\mathbf{S})$ as

$$h(u, v) = \max\{\lambda(u, v), \lambda(v, u)\}.$$

The distance function h is called the *Hausdorff* distance. Note that

$$h(u, v) = h(v, u),$$

$$0 < h(u, v) < \infty \text{ for all } u, v \in \mathcal{H}(\mathbf{S}), u \neq v,$$